



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,227	07/11/2001	Roger D. Hersch		7585

7590  
Prof. Roger D. Hersch  
EPFL - IC-LSP  
Station 14  
CH-1015 Lausanne,  
SWITZERLAND

04/09/2009

EXAMINER
----------

ROSARIO, DENNIS

ART UNIT	PAPER NUMBER
----------	--------------

2624

MAIL DATE	DELIVERY MODE
-----------	---------------

04/09/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/902,227		HERSCH ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Dennis Rosario		2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-5,7,10,13,24-28 and 34-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7,10,13,24-28 and 34-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The after final amendment was received on 7/4/07. Claims 1,3-5,7,10,13,24-28 and 34-38 are pending.

### ***Allowable Subject Matter***

2. The indicated allowability of claims 1,3-5,7,10,13,24-28 and 34-38 is withdrawn in view of the newly discovered reference(s) to Finkelstein et al. (Image Mosaics) in view of Browne et al. (US Patent 6,504,545 B1). Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. Sec. 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. Sec. 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

4. Claim(s) 24-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 24 recites an image which

Art Unit: 2624

does not impart functionality to a computer or computing device, and is thus considered nonfunctional descriptive material. Such nonfunctional descriptive material, in the absence of a functional interrelationship with a computer, does not constitute a statutory process, machine, manufacture or composition of matter and is thus non-statutory per se. Thus, claims 25-28 are rejected.

**5.** Claim(s) 1,3-5,7,10,13,24-28 and 34-38 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example, claim 1 does not claim a structural limitation in the body of the claims that performs the methods of the body.

***Claim Rejections - 35 USC § 103***

**6.** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

---

<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1,3-5,7,10,13,24-28 and 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Finkelstein et al. (Image Mosaics) in view of Browne et al. (US Patent 6,504,545 B1).

Regarding claim 34, Finkelstein teaches a computing system for electronically displaying a target image with an embedded microstructure evolving over time, said computing system comprising:

a) a server computing system located at one Internet location for rendering said target image from an original image by synthesizing target image instances and comprising a client computing system located at another Internet location receiving a sequence of image instances from the server computing system and displaying said sequence (not taught in Finkelstein),

b) where a time-dependent animation transformation (implied by "tiles may change over time" on the last page: Video mosaics) specifies how said embedded microstructure (one of said tiles) spatially (not taught in Finkelstein) evolves (corresponding to said change over time) over a succession of displayed target image instances (also known as video of said video mosaics),

c) where said embedded microstructure (or tile) comprises visual motive elements selected from a set of text, logo, symbol (or "Global currency" in fig. 8 that shows an image with currency that typically includes symbols that represent a respective country) and ornament,

d) where said visual motive elements evolve (corresponding to said change) spatially independently (Finkelstein does not clearly teach the claimed element that evolves spatially and independently of a subject) of the content of said original image (such as a globe with no texture or no tile of currency);

e) where synthesizing (implied in a video environment) the target image instances (or video) from said original image (said globe with no texture) comprises a halftoning operation (in section 3 and 4.4 of Finkelstein) which adapts intensities (or a color for "Color correction" in 4.4), respectively colors of said visual motive elements to intensities (or the corrected color), respectively colors of said two-dimensional original image.

Finkelstein does not teach the server limitation, spatially evolves and evolve spatially independently of the content of said original image. However, Finkelstein teaches that the method can be practiced in the environments of advertising and commercials, art, transmission and security. In addition, Finkelstein teaches that the tiles or mosaic tiles can be changed as a function of time; however, Finkelstein does not clearly state how they can change.

Browne teaches "Internet based advertising" in col. 1, lines 11-13 and "mosaic tile colouring" in col. 10, lines 29-31 and the limitations of:

a) a server computing system located at one Internet location for rendering said target image from an original image by synthesizing target image instances and comprising a client computing system located at another Internet location receiving a sequence of image instances from the server computing system and displaying said sequence (the whole limitation is well known to one of ordinary skill in the Internet given that Browne teaches said Internet based advertising)

b) where a time-dependent animation transformation (corresponding to “animations...obey...time” in col. 11, lines 41-45) specifies how said embedded microstructure (a tile of said mosaic tile colouring) spatially evolves (two interpretations from col. 9, lines 44-60:1) Browne teaches overlapping shapes or mosaic tiles, which includes a spatial aspect such as a foreground and background, that evolve for the fact that the shapes or tiles progress forward in time and changes via the animation that obeys time. 2) Browne teaches that the overlapping mosaic tiles change in colour as a function of changing a radius and hence corresponding circle over time; thus, Browne teaches a spatial evolution in the context of a circle's size that changes the color of the overlapping mosaic tiles) over a succession of displayed target image instances (so as to form a result of said animation)

c) where said visual motive elements evolve spatially (via the two interpretations) independently of the content of said original image (as shown in fig. 16(a)(d) where the letter “m” is maintained, but changes in colour via the overlapping mosaic tiles).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Finkelstein's halftoning to create mosaic tiles with Browne use of the mosaic tiles for animation, because Browne's animated tiles can be used in advertising to catch a customer's attention more than a static advertising image in order to sell a product.

Claims 24,35,36 and 37 are rejected the same as claim 34. Thus, argument similar to that presented above for claim 34 is equally applicable to claims 24 and 35-37.

Regarding claim 25, Browne teaches the image of claim 24, where the visibility of the embedded microstructure (or "opacity" in fig. 3) is tuned by a mask (or "opacity function" in col. 9, lines 55-58) whose values (or "variable parameter" in col. 9, lines 51-54) represent relative weights ("opacity index" in col. 9, lines 51-54) of said original image (said letter "m" without coloring of mosaic tiles) without embedded microstructure (without said mosaic tiles) and a corresponding image rendered (any one of fig. 16(a)-16(d)) with the embedded microstructure (since fig. 16 shows the colored mosaic tile of said letter "m").

Claims 26 and 27 is rejected the same as claim 25. Thus, argument similar to that presented above for claim 25 is equally applicable to claims 26 and 27.

Claim 28 is rejected the same as claim 37. Thus, argument similar to that presented above for claim 37 is equally applicable to claim 28.

Regarding claim 38, Browne teaches the computing system of claim 36, where the microstructure evolution parameters (all of fig. 3 as applied to the tiles of Finkelstein)



Art Unit: 2624

also comprise a warping transformation (fig. 15(a)-(d)) and where the client computing and display system (as implied by said Internet based advertising) also receives from the server computing system as input data a mask (fig. 3:Opacity) whose values represent relative weights of the original color image and of image instances obtained by said halftoning operation (the result of which is a mosaic image in fig. 16(a) which is based upon the halftone inspired mosaic tiles of Finkelstein), the mask defining the position and visibility of the microstructure within the target image (as shown by the progression from fig. 16(a)-16(d)).

Claim 1 is rejected the same as claim 34. Thus, argument similar to that presented above for claim 34 is equally applicable to claim 1 except for the additional limitation as taught by Finkelstein of where said rendering step (or displaying step) comprises a mapping (corresponding to finding a "most similar" image in section 4.3 of Finkelstein) of positions between target image instances (Finkelstein does not teach mapping between positions between target image instances, which are implied frames of the video mosaics) and positions (or "each location" in 4.3) within said original microstructure space (corresponding to a "location within the tile grid" in section 4.3) according to said time-dependent geometric animation transformation and a halftoning of said two-dimensional original image (so that the most similar image, which is halftone-based, can be used for a video mosaic that implies the claimed transformation).

Finkelstein does not teach mapping between target image instances, but teaches that the mosaic tiles can be used in a video environment with a target image where each frame with the target image and tiles are the claimed target image instances.

Browne teaches the video environment with mosaic tiles and the claimed mapping of positions between target image instances via a frame index that can find for example frame 3 which is in a position between frames 2 and 4 of a frame sequence as discussed in col. 12, lines 3-16.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Finkelstein's video mosaics with Browne's video index, because Browne's index can quickly display a desired image instead of playing the whole animation of the desired image.

Regarding claim 3, Browne teaches the method of claim 1, where only a part of said two-dimensional original image (fig. 16(a)) defined by a mask (or said overlapping images) is rendered (displayed) with said embedded microstructure (as shown by the interior of the letter "m").

Regarding claim 4, Finkelstein teaches the method of claim 1, where an additional step enables to specify a set of basic colors ("three color channels" in section 4.4 such as RGB,HSV,Lab) for rendering said target image instances.

Regarding claim 5, Finkelstein teaches the method of claim 4, where said two-dimensional original image (said letter "m") is halftoned by dithering (or color corrected using the inspiration of a "dither-matrix" in said 4.4 that implies the claimed halftoned)

Art Unit: 2624

at least one of the basic colors with a dither matrix (as shown in section 3 as "D")

embedding the microstructure (resulting in figures 4(a)-(e)).

Regarding claim 7, Finkelstein teaches the method of claim 4, where halftoning is carried out by multicolor dithering (given that Finkelstein uses a color embodiment and a grayscale embodiment as discussed in 4.4) with the defined set of basic colors and with a dither matrix embedding the microstructure.

Regarding claim 10, Finkelstein teaches the method of claim 1, where the evolution of said embedded microstructure over time (which corresponds to the video mosaic that can change tiles over time) comprises a blending between two microstructure shapes (as known to one of ordinary skill in art of art: "blends" in section 2 a concept of which is applied to tiles, which is rectangular in shape).

Regarding claim 13, Finkelstein teaches the method of claim 1, where the embedded microstructure is made more flexible by an additional warping transformation (corresponding to "other... sophisticated rules" in section 4.4, 3rd paragraph includes a distortion of colors which corresponds to the claimed additional warping transformation, such as warping of colors) mapping between a target image space (or displayed image) containing the target image (to be displayed) and an animated dither matrix space (said inspired halftoning tile that can change in the video mosaic: note that the tile does not actually move, but has the capability to move in the video mosaic. If the claimed animated dither matrix space actually displayed motion, then a mapping from an image displaying motion to the claimed target image would overcome the interpretation of claim 13).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Rosario/  
Examiner, Art Unit 2624

/Matthew C Bella/  
Supervisory Patent Examiner, Art  
Unit 2624

Application/Control Number: 09/902,227  
Art Unit: 2624

Page 12